

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference HA0768PCT	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">FOR FURTHER ACTION</div> <div style="font-size: small;">see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</div> </div>
International application No. PCT/US02/06581	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">International filing date (<i>day/month/year</i>) 02 MARCH 2002</div> <div style="width: 50%;">(Earliest) Priority Date (<i>day/month/year</i>) 02 MARCH 2001</div> </div>
Applicant BRISTOL-MYERS SQUIBB COMPANY	

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the
☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
2. ☐ Certain claims were found unsearchable (See Box I).
3. ☒ Unity of invention is lacking (See Box II).
4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:
5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is Figure No. ____

☐ as suggested by the applicant.
☐ because the applicant failed to suggest a figure.
☐ because this figure better characterizes the invention.

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/06581

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-6, 8-9, 11-13 reading on claim 10

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/06581

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/256, 278, 318, 319, 322, 323, 326; 544/60, 129, 349, 360; 546/17, 193, 199, 201, 205, 209, 210

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAS—structure

EAST/WEST—subclass image

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, P	US 2002/0019523 A1 (PALUCKI et al.) 14 February 2002, see entire document, especially pages 9-57 scheme 3.	1-6, 8-13
Y	US 2001/0029259 A1 (NARGUND et al.) 11 October 2001, see entire document, especially pages 22-27, examples 1-34.	1-6, 8-9, 11-12
Y	US 5,936,089 ^A (CARPINO et al.) 10 August 1999, see entire document, especially column 3-4 description with col. 79, example 21.	1-6, 8-9, 11-12
Y	US 5,492,916 A (MORRIELLO et al.) 20 February 1996, see entire document, especially col. 49, Table Ib and col. 118, Table XI, and abstract.	1-6, 8-9, 11-13

☐ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"A" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

11 SEPTEMBER 2002

Date of mailing of the international search report

17 OCT 2002

Name and mailing address of the ISA/US
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/06581

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (7): A61K 31/44, 31/445, 31/505; C07D 401/12, 401/14, 403/12, 403/14

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

514/256, 278, 318, 319, 322, 323, 326; 544/60, 129, 349, 360; 546/17, 193, 199, 201, 205, 209, 210

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

Group I, claims 1-6, 8-9, 11-13 (in part) and 10, drawn to R_1 , R_2 are independent substituents, $X(R_1)-CHR_2-CHR_3$, does not form rings.

Group II, claims 1-6, 8-9, 11-13 (in part) and 7, drawn to R_1 , R_2 are independent substituents, $X(R_1)-CHR_2-CHR_3$, forms ring.

Group III, claims 1-6, 8-9, 11-13 (in part) drawn to spiro compounds when R_1-R_2 forms a ring.

The inventions listed as Groups I-III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Compounds of groups I-III do not share substantial structural feature as to form one inventive concept. In Annex B of the Administrative Instructions, with respect to Markush Practice, it was stated (see Part(f)(i)(B)1 and (f)ii) that "Significant structural elements is....the commonly shared structure constitutes a structurally distinctive portion in view of existing prior art" and "if it can be shown that at least one Markush alternative is not novel over the prior art" then the question of unity of invention shall be reconsidered by the examiner.

It is evidenced that, at least one Markush alternative is not novel in the instant claims see Carpino et al. CA 126, RN 185056-27-3 anticipates claim 1, group I.